REMARKS

Pages 18 and 41 of the application have been amended to more correctly reflect that which is shown in the drawings. As required in the office action, the Abstract has been amended to fit the overall length requirements. Proposed amendments to Figures 2, 3, 5, 6, and 15 are presented. As required in the office action, Figures 2, 3, and 6 are amended to present descriptive material discussed in the specification. Similarly, Figure 5 is proposed to be amended to include descriptive material discussed in the specification. Figure 15 is proposed to be amended to reflect its relationship with Figure 6 as stated in the application (both a numeric correction and descriptive material are presented). No new matter is added.

Claims 1, 5, 8, 12, 17, 39-41, 53, 54, and 66-69 have been amended. Claims 1-69 remain in the application.

Claims 1 and 12 have been amended to highlight the site specific properties of the invention. That is, the invention provides a computerized model of the site where a communications may be installed, and provides a method for quickly and/or automatically determining whether certain components, component configurations, and component placement locations will yield a communication network that has desired performance metrics at one or more specified locations within the site. Claims 1 and 12 also have been amended to highlight the fact that some objects may not have attributes which impact performance.

Claims 8 and 17 have been amended to correct a spelling error.

Claim 15 has been amended to correct for dependency. Claims 40 and 41 have been amended to correct for dependency, and claim 39 has been amended to address the objection on claim dependency posed in the office action, and to similarly correct for claim dependency.

Claim 5 has been amended to reflect that several variations on "specifying" are contemplated by the invention.

Claims 53, 54, 66, and 67 have been amended to reflect that antenna configurations and positions can be automatically or manually changed.

Claims 68 and 69 have been amended to address the rejection lodged under 35 U.S.C. 112, second paragraph, and now recite placement at locations that meet specified criteria (as opposed to placement at desirable locations and not at locations that are not desirable). It is believe the language has substantially the same meaning, but avoids the vagueness issues raised by the Examiner.

Claims 1-69 have been rejected as being anticipated by "SMT Plus 1.0 User's Manual". This rejection is respectfully traversed.

With reference to page 10 of the application, the prior art systems for predictions of communication performance, such as SMT Plus, required too much time to be applied in a real time manner. With reference to pages 12 and 13 of the patent application, the invention allows a user to specify a desired performance metric for a specific location in the modeled environment (referred to as a "boundary position"), and, furthermore, automatically iterates over configurations and positions, etc., to determine viable configurations to meet the desired performance metric. The desired metric may be for example, -85 dBm received RF signal strength, 18dB signal to interference ratio, and/or 500 kilobits per second throughput, etc. (see page 10 in the first paragraph under the summary). Returning to page 13 of the application, the user specifies a number of locations which may be suitable for placement of hardware components. For aesthetic and/or engineering purposes, not all locations may be acceptable. As discussed on pages 13 and 14 of the application, the appropriate configurations are determined and stored, and in some applications, maybe preferentially ranked. As noted on page 24 of the application, the arrangement of walls in a building may be determinitive of the placement of Ethernet ports or other physical connections. The user also selects components which may be used and component configurations which may be used in the communication network. It being understood that the user may have a preference for a particular brand of component, or preference that is related to price. After the selections are made:

> "a communication system performance prediction model is run whereby the computer determines the predicted performance metric at each of the boundary positions and compares the predicted performance metric with

the performance metric specified for the boundary position. " (see last paragraph on page 13)

Figure 7 of the application illustrates the process discussed above, and Figure 8 of the application illustrates an alternative process where a grid (see 95) is used to select equally spaced positions as possible component placements. In the method of Figure 8, aesthetics may play less of a factor in the design of the communications network, but the methodology may be easier to fully automate due to the automated nature of selecting the possible component placement sites. Figure 9 of the application presents a variation on the process where the user can specify allowing all or only a few possible configurations for the selected component models (see 115) (this is also discussed in the last paragraph on page 22 of the application). Figure 10 of the application illustrates a variation of the invention that includes the features of both Figures 8 and 9.

Figures 11 and 12 of the application show a variation on the invention which considers components which are already present in the environment being modeled (e.g., "pre-positioned components", see 115). Reference is made to pages 28 and 29 of the application which discusses the use of these components and/or their locations alone or in addition to other components in the communication network which is being designed.

Figure 13 of the application shows an automated methodology whereby the computer iterates through components, configurations, and possible locations for component placement, to identify one or more possible sets of components, component configurations, and locations for components which may meet the desired performance metric at the selected boundary positions. Pages 29, 30 and 39 of the application detail the automated methodology contemplated by the invention.

The claims in the application have been carefully crafted to cover this simplified and/or automated method for determining component selections, placement locations, and configurations which would meet a specified performance metric at a particular site where a communications network is or will be employed. The invention allows an unskilled user to determine components,

placements, and configurations, and to determine costs very quickly and easily merely by specifying one or more performance metrics at one or more locations. The invention could also be embedded within network equipment to automatically select network configurations and equipment settings. In particular, independent claims 1, 12, 19 and 31 require establishing a desired performance metric at at least one location, specifying components to be used in the network as well as locations where the components could be positioned, and predicting a performance metric at the at least one location based on the specified components and locations, and comparing the performance metric to the desired performance metric. In this way, the designer or the network control equipment can rapidly determine one or more constitutions of components, as well as their placement and configurations (operational settings) which would satisfy the restriction imposed by the designer (i.e., the established desired performance metric at at least one location). This may be done automatically with iterations through several or all components selectable from a database and iterations through several or all possible locations and configurations for the components. Use of a grid to establish several locations for component placement can help accelerate the iterative process such that it is essentially fully automated. Independent claims 42 and 55 are a variation on the concept set forth in claims 1, 12, 19 and 31, in that the claims require establishing parameters of a desirable configuration, and then determining an optimized or preferred configuration based on a comparison of the predicted or measured parameters with those which were established. Claims 68 and 69 are similar to claims 42 and 55 in that they also include the establishing and comparison steps.

The SMT Plus 1.0 package and reference material simply do not include (or make obvious) the functionality of the present invention (for the Examiner's reference page 2 of the reference identifies the inventors Rappaport and Skidmore as being responsible for the development and enhancement of the SMT Plus product). That is, the Examiner's conclusion that SMT Plus establishes a desired performance metric for at least one location within the space is erroneous. Rather, SMT Plus simply shows the results for a particular or arbitrary transmitter

location, and lacks the ability to iterate, adapt, or rank over many possible settings or configurations. Said another way, SMT Plus had no way of providing comparisons and iterations from pre-defined "desired" results.

With reference to the passages identified by the Examiner, as explained on page 2 of the SMT Plus manual, SMT Plus allows a user to display the floor plan of a building, manually position base stations and interference sources on the floor plan, and view predicted coverage contours for each base station. In SMT Plus, the user does not "establish" a performance characteristic for a particular location, and does not rely on the package to automatically determine components, component configurations, or locations for component placement based on the established characteristic at a particular location, as is done in the present invention. That is, the claimed concept and innovation had not occurred at the time of the SMT Plus product.

Page 9 of the SMT Plus manual explains that the goals of the SMT Plus system is accomplished using a number of uniformly spaced receiver points encircling the base station. Page 14, second paragraph, of the SMT Plus manual merely relates to parameter sets for particular simulation runs, but nowhere does the SMT Plus manual teach the concept of iteratively adjusting or comparing simulation runs for achieving a predetermined "desired" network performance metric at one or more locations. Pages 25 and 26 are in the tutorial section of the manual, and relate to configuring the simulation and placing the base stations and interference sources. It should be noted that page 25 of the tutorial section discusses calculations for a variable number of contour points surrounding the base station, but it should be clear to the Examiner that it does not pertain to establishing, before the contour is calculated, a particular "desired" performance metric at a specific location. Further, page 26 of the tutorial section discusses placement of base stations, but not establishing performance metrics at a specific location. Finally, page 43 of the SMT Plus manual relates to contour information. While not specifically stated in the office action, there may be some confusion as to what is meant by "minimum acceptable C/N" and "minimum acceptable C/I". This basically defines the contour line whereby anything within the contour meets

the minimum acceptable requirements. For purposes of illustration of this point, the Examiner's attention is directed to Figure 4.3 on page 24 of the SMT Plus manual and Figure 5.10 on page 32 of the SMT Plus manual. As can be seen from these figures, a pair of contours are predicted and illustrated directly on top of a floor plan. As noted above, the contours show everything that satisfies the "minimum acceptable" criteria lying within the contour line that includes the base station. What is not shown, however, is a specific "established" ("desired") performance metric at a specific location. The user of the SMT Plus had no ability to command or force the displayed contour to meet an established performance metric at a particular location, but rather had to accept the contours as they were computed. SMT Plus had no way to adapt or iterate equipment locations or configurations in order to adjust the computed contour. Instead, the user had to manually make adjustments and run a completely new simulation. Note that when an interference source is added (as in Figure 5.10) the predicted contours are directed away from the interference source. You simply do not get from SMT Plus a configuration or set of configurations which meet or satisfy an established performance metric for one or more specified locations in the site specific map.

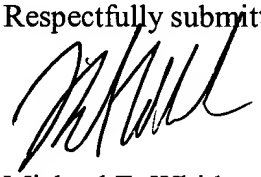
The SMT Plus at most describes a prior system which requires a user through extensive manual trial and error to determine an optimized or preferred configuration for a communications network which will satisfy certain requirements, with no ability to iterate, rank, or adapt for desired preformance metrics at particular locations. It provides no means for the user to, up front, establish a performance metric for one or more locations within a site, and to then in a quick or automated fashion, ascertain whether or not certain configurations or component placement locations satisfy the criteria. Certainly SMT Plus does not suggest or contemplate a process whereby the user or a computer or a network controller can quickly or automatically identify one or more configurations or compare different configurations that satisfy the "desired" or "established" performance metrics (that is, SMT Plus could not selectively identify or compare any configuration for specific predetermined criteria), AS IS DONE IN THE PRESENT INVENTION.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-69 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041 (Whitham, Curtis & Christofferson, P.C.)

Respectfully submitted,



Michael E. Whitham
Reg. No. 32,635

Whitham, Curtis & Christofferson, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190

Tel. (703) 787-9400
Fax. (703) 787-7557

Customer No.: 30743

Proposed Amendments to the Drawings

Attached hereto are annotated revisions to Figures 2, 3, 5, 6, and 15. It is proposed to add descriptive information to each of 2, 3, 5, 6, and 15 which is discussed in the patent specification. Furthermore, with respect to Figure 15, it is proposed to correct the indicia to correspond to Figure 6 as is discussed in the patent application. It is requested that the proposed revisions be reviewed and approved with the next office action.